

I CLAIM:

1. In combination, a fluid dispenser and an electrochemical cell, the fluid dispenser comprising:

a reservoir containing a fluid to be dispensed and a dispensing mechanism requiring an electric current to dispense fluid from the reservoir,

the electrochemical cell comprising an electrolyte and two electrodes namely an anode and a cathode, separated from each other with the electrolyte between the two electrodes,

fuel for the cell comprising fluid from the reservoir in communication with a first of the electrodes,

the two electrodes electrically coupled across the dispensing mechanism to provide current flow through the dispensing mechanism by chemical conversion of the fluid at the first of the electrodes.

2. A combination as claimed in claim 1 wherein the electrochemical cell is a fuel cell.

3. A combination as claimed in claim 2 wherein:  
atmospheric air containing oxygen is in communication with a second of the electrodes,

with chemical conversion of the fluid at the first electrode to provide current flow oxygen is consumed at the second electrode where water is produced.

4. A combination as claimed in claim 1 wherein the fluid comprises an alcohol compound which comprises the fuel for the cell.

5. A combination as claimed in claim 1 wherein the fluid to be dispensed is for use after dispensing for a purpose other than as fuel for the cell.
6. A combination as claimed in claim 5 wherein the fluid is a cleaning fluid.
7. A combination as claimed in claim 5 wherein the fluid is a disinfectant solution for a hygienic or medical use.
8. A combination as claimed in claim 5 wherein the alcohol compound is selected from methyl alcohol, ethyl alcohol, propyl alcohol, isopropyl alcohol, butyl alcohol, isobutyl alcohol, sec-butyl alcohol, tert-butyl alcohol, 1-pentanol, 1-hexanol, ethylene glycol, propylene glycol, glycerol and benzyl alcohol.
9. The compound of claim 5 wherein the alcohol compound is selected from methyl alcohol and ethyl alcohol.
10. A combination as claimed in claim 9 wherein the alcohol compound is present in at least 20% by volume of the fluid.
11. A combination as claimed in claim 1 wherein the dispensing mechanism comprises a pump for dispensing fluid from the reservoir, the pump having an inlet in communication with the reservoir and an outlet out of which fluid from the reservoir drawn into the pump inlet is dispensed.
12. A combination as claimed in claim 11 wherein the first electrode is in communication with the fluid upstream from the pump.

13. A combination as claimed in claim 11 wherein the first electrode is in communication with the fluid after the fluid has passed through the pump.

14. A combination as claimed in claim 1 wherein the first electrode is in communication with the fuel within the reservoir.

15. A combination as claimed in claim 11 wherein the reservoir has an outlet and a passageway for a passage of fluid from the outlet of the reservoir to the inlet of the pump,

the passageway being in communication with the first electrode such that at least some fuel in the passageway contacts the first electrode.

16. A combination as claimed in claim 1 wherein the reservoir is a collapsible reservoir which reservoir collapses as fuel is dispensed.

17. A combination as claimed in claim 1 wherein the electrochemical cell is an electrolytic battery.

18. A combination as claimed in claim 1 wherein the two electrodes and the electrolyte are all disposed within the reservoir.

19. A combination as claimed in claim 18 wherein a gas is produced at the second electrode within the reservoir.

20. A combination as claimed in claim 19 wherein the reservoir has a liquid outlet at a lower portion of the reservoir and gas as produced at the second electrode,

wherein the gas rises through the fluid in the reservoir to an uppermost portion of the reservoir.

21. A combination as claimed in claim 20 wherein the reservoir is collapsible and expandable to accommodate increases and decreases in the volume within the reservoir occasioned by dispensing of the fluid and generation of gas at the second electrode.

22. A combination as claimed in claim 18 wherein the fluid is the electrolyte.

23. A combination as claimed in claim 1 wherein the reservoir has walls formed from flexible sheet material, at least one of the electrodes comprising a thin layer applied to a wall of the reservoir.

24. A combination as claimed in claim 18 wherein the reservoir comprises a collapsible bag with spaced sidewalls,

the cathode is carried on a first sidewall,

the anode is carried on a second sidewall spaced from the first sidewall,

the fluid in the bag between the cathode and the anode in communication with both the cathode and anode.

25. A combination as claimed in claim 24 including a spacer member in the bag between the anode and the cathode to keep the anode and the cathode spaced from each other on collapsing of the bag,

the spacer member permitting the fluid to pass therethrough.

26. A combination as claimed in claim 24 wherein the sidewalls are formed from a thin flexible sheet material and one of the anode and the cathode are printed on inside surfaces of the sidewalls within the reservoir.

27. A combination as claimed in claim 2 wherein electrolyte is a protonic exchange membrane having a solid polymer in which protons are mobile.

28. A combination as claimed in claim 2 wherein the fuel cell is an alkaline electrolyte fuel cell.

29. A combination as claimed in claim 1 wherein the cell is an acid electrolyte fuel cell.